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RESEARCH AND DEVELOPMENT

MONTHLY REPORT

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SEPTEMBER 1981

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PROJECT TITLE : BIOTECHNOLOGY

PERIOD COVERED : JULY 20 - SEPTEMBER 18, 1981

WRITTEN BY : Schulthess-D. (DIS)

CULTURE COLLECTION

All the strains were recultivated. A part of each strain was freeze-dried and another part was deep frozen in liquid nitrogen.

STRIP-EXTRACT ANALYSIS

Due to several problems encountered with strip-extract denitration, a comparative analysis of a 1 : 10 strip extract and a 1 : 10 extract of a RL - blend was carried out. All the parameters tested had approximately the same concentration, with the exception of total alkaloids, manganese, nitrate and ammonia. There were about ten times more total alkaloids and manganese and about four times more ammonia in the strip extract than in the RL extract. On the other hand the strip extract contained only half the amount of nitrate found in the RL extract.

The problems encountered with the strip extracts (1) were obviously not due to the absence of trace elements or other substances normally found in RL extracts.

STRIP EXTRACT DENITRATION (2)

If strips were extracted in a ratio of 1 : 15 with water at 20°C, no problems with the denitration of the extract occurred. This result was obtained using a glucose : nitrate ratio of 25.8 and was confirmed up to a dilution rate of 0.27 hr^{-1}. If the nitrate content of the strip extract was doubled by adding potassium nitrate (i.e. raised from 500 to 1000 ppm $N\text{-}NO^{-}_{3}$) the denitration only worked at very low dilution rates. The same problems occurred if the extraction ratio was lowered from 1 : 5 to 1 : 10.

REFERENCES

(1) Schulthess-D., Monthly Report, Biotechnology July 1981.
(2) Berney-J., Notebook 81 03 04.

DIS/jig/SEPTEMBER 24, 1981

Schulthess

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PROJECT TITLE : PROTAGORAS

PERIOD COVERED : AUGUST 18 - SEPTEMBER 17, 1981

WRITTEN BY : Bindler-G.-N. (GNB)

Preliminary information on Mexican Burley strip extractions has enabled us to choose a partially defined process : it involves water extraction, followed by lowering of the pH, addition of KOH and enzyme extraction. In order to optimize the different extraction steps we are trying to find the approximate extraction efficiency by varying the temperature from 37°C to 95°C during the water extraction phase. There is a notable decrease in the protein content of the resulting tobacco when the temperature is increased from 37°C to 50°C and a slight protein decrease is found when the temperature is increased from 60°C to 95°C. The optimum extraction takes place between 50°C and 70°C, a higher temperature gives a slightly better result. Varying the KOH concentration from 0 to 1 M after a first water wash leads to a considerable loss of protein at KOH concentrations of between 0.4 and 0.5 M. The loss of protein at higher concentrations of KOH is proportional to the tobacco weight loss. The resulting tobacco has a 30% loss in protein content.

REFERENCES

(1) Bindler-G.-N., Notebook 80.08.04
(2) Mangilli-M.-F., Notebook 80.08.05

GNB/jig/SEPTEMBER 29, 1981

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PROJECT TITLE : SAVOURY

PERIOD COVERED : AUGUST - SEPTEMBER 21, 1981

WRITTEN BY : Ghiste-P. (PAG)

The purpose of Project SAVOURY is to prepare flavours which, when pyrolized with sheet or tobacco, give Burley type flavour characteristics.

PRODUCTION OF FLAVOURS

Three samples of reaction flavours were produced under the following conditions :

Flavour code	C-39/2 (1)	C-40/1 (2)	P-17/1 (4)
Initial amino-acid composition	st.hydr. HCl 6N	st.hydr. HCl 6N	st.hydr. H_3PO_4 10N
pH of reaction	9.50	6.40	6.5
Neutralizing agent	NH_4OH	buffer solution	-
Sugar used	glucose	glucose	glucose
Total solid content %	41	44	40
Final pH	7.65	4.65	5.20
Temperature of reaction (°C)	90	105	90
Time of reaction (hr)	144	24	140
Ratio (aa/sugar)	1:1	1:1	1:1
Solvent	water	water	water

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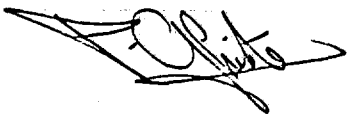
Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

REFERENCES

(1) Ghiste-P., Notebook 79120 p. 18.
(2) Ghiste-P., Notebook 79120 p. 19.
(3) Ghiste-P., Notebook 79120 p. 26.



PAG/jig/SEPTEMBER 24, 1981

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PROJECT TITLE : SALAMANDER II

PERIOD COVERED : JULY 30 - SEPTEMBER 22, 1981

WRITTEN BY : Murray-M. (MUM)

EXPERIMENTAL

ISH measurements using an electrostatic smoke trap operated at 20, 25 and 30 KV gave for ØS-B-TOT cigarettes ISH values of 28.5 ± 2.3, 23.7 ± 2.5, 29.1 ± 5.9.

CONCLUSION

The results are disperse but do not indicate a trend towards increased ISH at higher voltage levels; a significant contribution to ISH by entities having an electric charge seems unlikely.

EXPERIMENTAL

ISH measurements were carried out with receiving flasks of different volumes.

Flask volume	ISH
250 ml	15.9
500 ml	23.1
1000 ml	25.8
2000 ml	34.4
4000 ml	36.5

Further experiments were carried out placing an intermediate flask before the standard receiving flask.

Intermediate flask	ISH
500 ml	37.8
1000 ml	37.4
2000 ml	33.7
4000 ml	38.3

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CONCLUSION

Increasing smoke age does not produce an increased ISH value. The increased values with varied receiving flask volume are probably due to increased smoke / cysteine contact time.

EXPERIMENTAL

Passage of a 500 ppm nitrogen dioxide / air mixture through a cysteine solution under standard ISH measurement conditions produced an ISH value of 28.8%.

CONCLUSION

Nitrogen dioxide, produced by oxidation of nitric oxide present in cigarette smoke, could make a large contribution to observed ISH values.

FUTURE PLANS

The reaction products of NO_2 and cysteine under standard conditions should be analysed and compared with those of the smoke vapour phase. A HPLC method is currently under development.

MUM/jig/SERPTEMBER 24, 1981

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PROJECT TITLE : LAUNDRYMAN

PERIOD COVERED : AUGUST 15 - SEPTEMBER 15, 1981

WRITTEN BY : Piadé-J.-J. (JJP)

EQUIPMENT

The equipment used for simultaneous determination of CO in MS and SS smoke was recalibrated and a linearization curve computed.

The set-up was modified in order to decrease the tubing volume and increase the measurement time.

SALT CASINGS

Cigarettes were made to the same RTD with cased MLF blend sprayed with pure water or 10 different salt solutions CO, MS and SS yields were measured and significant reductions could be made in some cases. Analytical values have to be confirmed on a larger scale with the modified equipment. There seems to be a trend towards higher CO reductions with Na salts rather than with K.

ANALYTICAL

Different procedures were investigated for analysis by HPLC of organic acids in tobacco extracts.

Water extracts were analysed after clean up by Rev. Phase "Sep-Pack" cartridges on a C18 column with ion suppression (PH 2.4 Phosphate buffer) and on an anion exchange resin using an ion exclusion pre-column. Detection by R.I. was found more adequate than variable wavelength UV.

JJP/jig/OCTOBER 5, 1981

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Δ% CO

Salt	Conc.	per cig.		Per g. tob.		Per puff	
		MS	SS	MS	SS	MS	SS
Na Ascorbate	5%	- 2	- 5	- 1	- 3	+ 5	- 3
K Cl	5%	0	- 6	0	- 5	+ 5	- 2
Na Cl	5%	-14	-30	-14	-30	-18	-34
$KHCO_3$	5%	+15	- 9	+12	-11	+15	- 8
$NaHCO_3$	5%	- 1	-10	- 3	-12	0	- 9
$K_2 CO_3$	5%	-13	- 3	-17	- 8	- 7	+ 3
$Na_2 CO_3$	5%	-22	-25	-24	-27	-21	-24
tri Na Citrate	5%	-19	-16	-19	-27	-24	-22
tri K Citrate	5%	- 3	- 5	- 4	- 5	- 2	- 1
$NH_4 Cl$	2%	- 8	-15	- 6	-13	-15	-20

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PROJECT TITLE : ROSA

PERIOD COVERED : JULY 30 - SEPTEMBER 22, 1981

WRITTEN BY : Murray-M. (MUM)

Cigarettes have been prepared for both mainstream and sidestream nitrosamine analysis. Filters with varied fibre cross-section and a range of TEGDA or triacetin concentrations have also been prepared. Due to instrumental problems no analyses have been carried out yet.

MUM/jig/SEPTEMBER 24, 1981

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PROJECT TITLE : IMPREGNATION / EXPANSION OF TOBACCO

PERIOD COVERED : AUGUST 15 - SEPTEMBER 15, 1981

WRITTEN BY : Villard-J-M. (JMV)

OBJECTIVE

The objective is the study of smoke parameter modification by impregnation with different salt solutions, followed by tobacco expansion.

A bibliographic survey was made on tobacco impregnation and subsequent freeze drying. Preliminary experiments on pure water expansion have been performed. An experimental set-up is being produced.

JMV/jig/OCTOBER 5, 1981

0001470096

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PROJECT TITLE : ANALYTICAL INVESTIGATIONS

PERIOD COVERED : AUGUST 16 - SEPTEMBER 28

WRITTEN BY : Lecoultre-E. (ETL)

MONO-, DI- AND TRI- CARBOXYLIC ACIDS

The reaction of carboxylic acids with ethyl iodide to produce the ethyl ester derivative has been found to be complex and unreliable. The procedure has been abandoned. A known method (1) has been modified for application to stem or leaf extracts using GC^2. Recoveries and standard deviation for each acid are listed in Table 1. Figure 1 illustrates the separation of acids found in a non-spiked tobacco.

GC^2/MS HARDWARE MODIFICATION

A Carlo Erba static headspace injector (Mod. HS 250) has been modified and installed on the existing GC - MS (HP 5992). Experimental work will begin soon. A new injection block (Mod. HP 18740) for capillary GC has been installed.

REFERENCES

(1) Court-W.A., Journal of Chromatographic Science Vol. 16 p. 314 - 317, July 1978.

ETL/jig/OCTOBER 2, 1981

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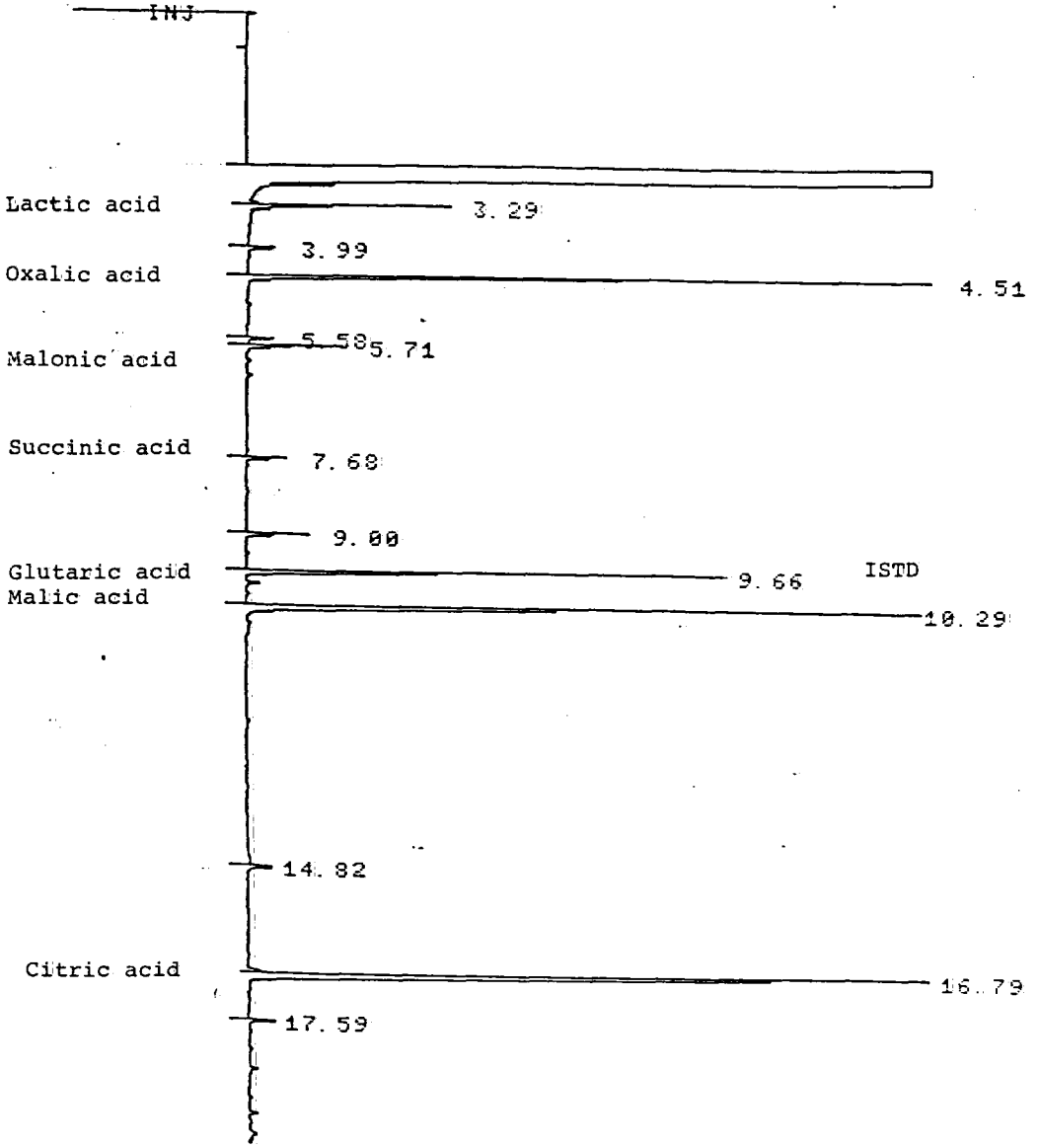
Figure 1 : Chromatogram of ethyl esters of mono-, di- and tri-carboxylic acids in non-spiked tobacco.
Stationary phase SP 2100; 50m x 0.32 mm i.d.



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	(1) mg added	(1) recovery %	(2) %	% added	% found	recovery	CV 2.5
Lactic	10	106	-	0.32	0.32	100	
	30	100	-	1.58	1.57	100	
Oxalic	10	102	2.96	0.43	3.40	100	8
	40	98		2.10	4.40	86*	
Malonic	5	102	0.25	0.42	0.69	102	2.5
	30	94		1.10	1.33	98	
Pyruvic	5	101	-	0.41	0.48	117	
	50	98	-	1.03	1.21	117	
Succinic	10	103	0.04	0.21	0.22	88	
	30	98		0.52	0.56	100	
Fumaric	5	110	0.05	0.21	0.20	76	
	30	94	-	0.53	0.50	86	
Malic	10	100	3.60	0.40	3.90	97	5
	60	97		2.00	5.10	91	
Citric	10	97	4.80	0.55	5.20	97	8
	40	88		1.10	5.41	91	
				2.75	6.32	84*	

(1) Carried out with standards.

(2) On tobacco.

* Unrealistic results due to excessive addition of acids.

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PROJECT TITLE : ANALYTICAL INVESTIGATIONS

PERIOD COVERED : JULY 24 - SEPTEMBER 22, 1981

WRITTEN BY : Murray-M. (MUM)

MENTHOL / WS 14 IN SIDESTREAM SMOKE

The threshold odour determination of WS 14 and of menthol in sidestream smoke was requested by Dr. Ikeda (PM - USA).

The threshold level should be determined by a panel and the menthol / WS 14 level measured objectively by GC.

Replicate smoking machines have been set up in adjacent closed hoods at Cortaillod. A sampling pump has been installed to permit a triangular odour evaluation test. Evaluation tests are under way using North Pole cigarettes with Marlboro as control.

NITRITE REMOVAL

Sulfamic acid, hydroxylamine hydrochloride and hydrazine were found to react with nitrate in tobacco extracts under acid conditions. As with urea, complete nitrite elimination was possible within 24 hours.

MUM/jig/SEPTEMBER 24, 1981

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PROJECT TITLE : NITRATE-REDUCTION BY CONTROLLED FERMENTATION

PERIOD COVERED : JULY 21 - SEPTEMBER 27

WRITTEN BY : Ruf-C. (CLR)

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1. TRIALS

1.1. LEAR Trial 8

LEAR trial 8 has been running in the 20-l fermenter for lo weeks with only three interruptions of the continuous mode. Extracts generated with a strip : water ratio of 1 : 15, 1 : 12 and 1 : 10 were denitrated at dilution rates varying between 0.09 and 0.22 h^{-1}. A total denitration was achieved with 1 : 15 and 1 : 12 extracts at a dilution rate of 0.22 h^{-1}. So far, the denitration of the 1 : 10 extract has been run successfully to 0.14 h^{-1}. Acid consumptions were determined in relation to different levels of sugar in tne extract. Such an optimization will continue with 1 : 10 and 1 : 8 extracts.

1.2. LEAR Trial 9

LEAR trial 9 was run from August 31 to September 18 with cooling of the fermenter at each week-end. Several parameters (pH, extract temperature, dilution rate) were changed in order to fight infection which often appeared in the fermenter. Until half way through the second week, no complete denitration was achieved. After that however, the extract was totally denitrated at a dilution rate of 0.24 h^{-1}. During the last 48 hours of the trial, the process was successfully run in closed loop operation, ie the centrifuged extract was recycled and sprayed onto the tobacco in the Rotocell extractor.

2. CIGARETTES

On September 3, the LEAR cigarettes were evaluated by the PME Leaf Department (1). Following this evaluation, it was thought that it would be better to apply the denitration on selected grades of Burley strips instead of on the whole Burley part of the Marlboro.

3. DRYING OF STRIPS

Two ways of drying the strips extracted in the pilot-plant were

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tested : 1) using the ETNA tower in Onnens and 2) using the Burley dryer in the primary.

3.1. ETNA Tower (2)

Extracted strips were transported to Onnens and fed into the ETNA tower at a rate of 150 kg/h. After the first batch, the air temperature was increased from 340°C to 390°C and steam was injected into it. These conditions were maintained and the strips were passed through the tower three times. Samples were taken for oven volatile determinations and the following values were obtained:

- before drying : 75.9% OV
- after the 1st drying : 64.7% OV
- after the 2nd drying : 50.8% OV
- after the 3rd drying : 37.3% OV

Because of the risks of fire in the tower, the trial was stopped after the third passage. At this stage, the strips were still too wet but had a very acceptable physical aspect.

3.2. Proctor & Schwartz (3)

About 200 kg of extracted strips were passed through the Proctor & Schwartz Burley dryer in the primary. No water was sprayed in the last section of the dryer, which is usually used to re-moisten the tobacco.
A first batch was run through the Proctor & Schwartz in the following conditions :

- air temperature : 120°C
- belt speed : 0.045 m/s (standard speed for Burley treatment)

For the second trial, the speed was reduced to 0.018 m/s. In these conditions the first batch was passed through the dryer again. None of the three trials gave satisfactory results. Whereas the strips dried only once were still too wet, those which were passed twice were on average too dry but contained nevertheless some wet parts.
With reference to the two previous trials, one possible way to dry strips extracted in the pilot-plant would be a combination of both processes :

1) ETNA tower : to pre-dry and unfold the strips
2) Proctor & Schwartz : to complete the drying

Some further trials are necessary to determine the right conditions.

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4. DRYING OF BIOMASS

In order to find a spray-dryer for the biomass removed by centrifugation of the LEAR fermented extract, the two main suppliers in this field were contacted : Anhydro and Niro-Atomizer. The equipment was examined (4, 5) and the possibility of carrying out trials is being discussed.

5. REFERENCES

1. Karle-P, De Borst-E, LEAR smoking evaluation at FTR, September 10, 1981
2. Ruf-C, Notebook 791105, p 25
3. Ruf-C, Notebook 791105, p 27
4. Ruf-C, Compte-rendu de la visite du 10.9.1981 aux FAR au Locle
5. Karbacher-P, Ruf-C, Compte-rendu de la visite du 24.9.1981 à Zeller & Söhne AG à Romanshorn.

CLR/sde/SEPTEMBER 30 1981

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

PROJECT TITLE : CIGARETTE DEVELOPMENT 1

PERIOD COVERED : AUGUST 22 - SEPTEMBER 25, 1981

WRITTEN BY : Singer-Z. (ZDS)

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303 COUNTRY SF

Objective

To develop a diluted version of the MARLBORO Finland in order to reduce the CO delivery in the mainstream smoke.

Summary

The diluted prototype COU 303 was produced at ATO by the end of last year.
Some problems, which are stated below, were encountered on the submitted cigarette samples :

- The cigarette tobacco weight was not within the specifications. It was 640 mg, i.e. 8 % lower than specified.
- In spite of the lower tobacco weight, an improvement in the firmness of the cigarettes was observed.
- The prototype was taste evaluated and compared with the current MLF Finland. In was impossible to find out the production date of the control cigarette.

In view of these facts, it was suggested to repeat the trial and, at the same time, to produce the undiluted version.

Description of samples and results

The diluted prototype is made of the less porous Tercig 08,5 ND 4321 (60 ml/min/cm^{-2}) in order to maintain the good impact of the first puffs which is so important, especially in a MARLBORO cigarette.
This alteration should theoretically tend to increase the CO delivery, therefore another diluted prototype will be produced by using the standard Tercig H 10 DIN 60 (68 ml/min/cm^{-2}). For a description of versions which will be performed, see the table on the next page.

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PROJECT NAME : C O U N T R Y S F		PROJECT NO : 303	PROJECT LEADER : ZDS	DATE : 09.29.1981
PROTOTYPE NO		1 P (MLF 03) Standard	2 P	3 P
BLEND NO		ML003 MLF	ML003 MLF	ML003 MLF
FORMAT : DIAMETER	mm	7.90 - 7.95	7.90 - 7.95	7.90 - 7.95
FILTER LENGTH	mm	20	20	20
CIGARETTE LENGTH	mm	79.4	79.4	79.4
TOTAL WEIGHT	mg/cig.	1015 *	1015 *	1015 *
TOBACCO WEIGHT AT 12 % O.V. (MC MAKER)	mg/cig.	802 *	802 *	802 *
CIGARETTE ROD WEIGHT	mg/cig.	846 *	846 *	846 *
CIGARETTE PAPER		TERCIG H 10 DIN 60	TERCIG H 10 DIN 60	TERCIG 08.5 ND 4321
TIPPING PAPER		TERTIP CDP-S 466 M	BENKERT Z3/60	BENKERT Z3/60
FILTER : TYPE		SINGLE	SINGLE	SINGLE
TOW		3.4 I / 46'000	3.4 I / 46'000	3.4 / 46'000
PAPER		TERTIP K	FU-POV 40 L	FU-POV 40 L

* : without ACCU-RAY saving

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427 KURT

Objective

To reduce the smoke delivery of the BOND LTN (BSD).
DPM : 9.0 mg/cig.
SN : 0.9 mg/cig.
CO : 9.0 mg/cig.
Format : 7.25 / 20 / 78.0 mm

Summary

The reduction of the DPM level down to 9 mg will place BOND LTN just above the super low tar sector (defined as cigarettes giving 8 mg DPM and less) which was the fastest growing sector during the past four years.
Based on the BSD tobacco blend, the target DPM value could be achieved :

- by using filtering materials of higher retention capacity.
- by increasing the dilution.
- by a combination of the above.

A cigarette paper of higher porosity than the existing Wattens 60 could have a somewhat negative influence on the quality of the first puffs.

Description of samples and results

Independently of this project, a new double filter in the moderate size format (7.20 x 80 mm) from Filtrona UK was tested on the BSD cigarette. Keeping the other raw materials unchanged, the cigarette prototype delivered 7 mg DPM and it was well accepted by the expert Panel A. For a description and comparison with the current BSD, see the table on the next page.
In order to achieve the objective, the first trial was performed by increasing the dilution. The evaluation is under way.

2000144106

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PROJECT NAME : K U R T S W		PROJECT NO : 427	PROJECT LEADER : ZDS	DATE : 09.29.1981
PROTOTYPE NO		1 P	2 P (BSD 01)	
BLEND NO		54 BSD / BS 004	54 BSD / BS 004	
TA	%	2.46	2.85	
NITRATE-NITROGEN	%	0.16	0.19	
REDUCING SUGARS	%	9.3	8.9	
FORMAT : DIAMETER	mm	7.23	7.23	
FILTER LENGTH	mm	20	20	
CIGARETTE LENGTH	mm	78	78	
TOTAL WEIGHT	mg/cig.	838	832	
TOBACCO WEIGHT AT 12 % O.V.	mg/cig.	622	619	
CIGARETTE RTD	mm WG	135	115	
DILUTION	%	41	30	
CIGARETTE PAPER		WATTENS 60	WATTENS 60	
TIPPING PAPER		Z4 / 120	Z4 / 120	
FILTER : TYPE		DOUBLE	SINGLE	
TOW		2.1 Y / 30 (15 mm)	3.4 I / 46'000	
PAPER		200 K	40 L	
RTD	mm	132 (122 sp)	89 (88 sp)	
DPM	mg/cig.	6.8	11.5	
TAR	mg/cig.	6.1	10.5	
SN	mg/cig.	0.69	1.03	
CO	mg/cig.	8.2	10.0	
NO	mg/cig.	0.12	0.13	
PUFF COUNT		8.5	8.2	

THE CIGARETTES ARE SMOKED ON A PM 20 PORTS.

Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

233 COUNTRY DB

Objective

To develop a diluted version of the MARLBORO Germany in order to reduce the CO-delivery in the mainstream smoke and to get a lower ranking in the Hertzfeld Index.
K : 13 mg/cig.
N : 0.8 mg/cig.
CO-reduction : about 20 %

Summary

Three alternatives of MARLBORO DB were blind product tested in Germany :

- Current undiluted MARLBORO MLK 21
- Current diluted MARLBORO MLK 12
- diluted prototype 31 T

All the cigarettes were tested by the MARLBORO smokers only. Both diluted versions (MLK 12 and prototype 31 T) showed rather negative results in comparison with the undiluted MARLBORO 21. Therefore, it was discussed whether or not to use the Pan-European MARLBORO for further development.

Description of samples and results

In order to achieve the above objectives with the Pan-European MARLBORO, trials were carried out on the MLK 15 by using higher filter dilution. For this task, the FU-POV 150 plug wrap paper and Z4/120 tipping paper were used. Two prototypes produced were evaluated in a duo-trio test against standard cigarettes. No significant difference was found between the control cigarette MLK 15 and prototype No 32 P.

B. Sigun

ZDS/cap/SEPTEMBER 29, 1981

00014108

Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

PROJECT NAME : C O U N T R Y D B		PROJECT NO : 233	PROJECT LEADER : ZDS	DATE : 09.17.1981
PROTOTYPE NO		MLK CH	32 P	33 P
BLEND NO		046-233ML022	046-233ML022	046-233ML022
TA	%	1.74	1.76	1.72
NITRATE-NITROGEN	%	0.18	0.19	0.20
REDUCING SUGARS	%	7.9	7.2	8.0
FORMAT : DIAMETER	mm	7.97	7.99	7.97
FILTER LENGTH	mm	20	20	20
CIGARETTE LENGTH	mm	84	84	84
TOTAL WEIGHT	mg/cig.	1045	1045	1043
TOBACCO WEIGHT AT 12 % O.V.	mg/cig.	815	813	815
CIGARETTE RTD	mm WG	94	80	88
DILUTION	%	22	38	27
CIGARETTE PAPER		Wattens 60	Wattens 60	Wattens 60
TIPPING PAPER		Z3 / 60	Z4 / 120	Z4 / 120
FILTER : TYPE		Single	Single	Single
TOW		3.4 I / 46'000	3.4 I / 46'000	3.4 I 46'000
PAPER		FU-POV 24 L	FU-POV 150	FU-POV 24 L
RTD	mm	64	63	61
K (TAR)	mg/cig.	14.8 (16.7)	11.4 (13.0)	13.4 (15.3)
N (SN)	mg/cig.	1.05 (1.23)	0.87 (1.01)	0.97 (1.14)
CO	mg/cig.	16.3	12.8	15.2
NO	mg/cig.	0.22	0.18	0.21
PUFF COUNT		9.6	10.1	9.9
HERTZFELD INDEX		68.1	54.3	63.1

THE CIGARETTES ARE SMOKED ON A PM 20 PORTS.

0001441109

Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

PROJECT TITLE : CIGARETTE DEVELOPMENT 2

PERIOD COVERED : AUGUST 22 - SEPTEMBER 28, 1981

WRITTEN BY : Frattolillo-A. (ANF)

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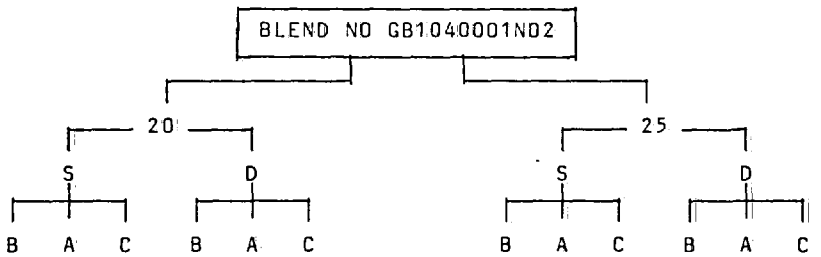
400 COMMONWEALTH 4 (CONTROL)

Objective

To develop a Virginia cigarette of high quality, delivering 4.0 mg tar, which conforms to the Hunter list.

Description of samples and results

Tobacco blend No GB1040001N02 was used to produce cigarette prototypes of different designs to which filters of 20 and/or 25 mm were attached in single and dual combinations.
For all prototypes, Mauduit 110-6 cigarette paper was used.
Unflavoured prototypes were produced, as references, along with two additional series (B + C versions), incorporating flavoured tobacco.
The schema below shows the overall set-up of the trials.



where : 20/25 : Filter length in mm
S : Single filter
D : Double filter
A : Cigarette prototypes, standard version (references)
B : Cigarette prototypes incorporating tobacco treated with AC solution SFC-DL-13
C : Cigarette prototypes incorporating tobacco treated with AC solution SFC-DL-14

At this time, no results concerning the total qualities of the cut-filler nor the finished cigarettes are available.
A complete evaluation will be presented in the next report.

0000144110

Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

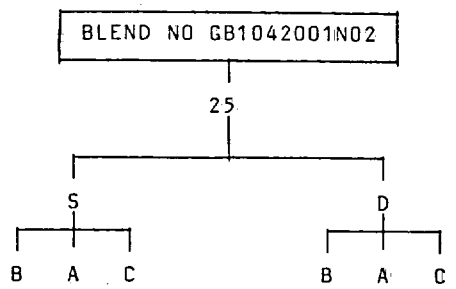
420 COMMONWEALTH 9 (CONTROL)

Objective

To develop a Virginia cigarette of high quality, delivering 9.0 mg tar, which conforms to the Hunter list.

Description of samples and results

Tobacco blend No GB1042001N02 was used to produce cigarette prototypes of different designs to which filters of 25 mm were attached in single and dual combinations.
For all prototypes, Mauduit 110-6 cigarette paper was used.
Unflavoured prototypes were produced, as references, along with two additional series (B + C versions), incorporating flavoured tobacco.
The schema below shows the overall set-up of the trials.



where : 25 : Filter length in mm
S : Single filter
D : Double filter
A : Cigarette prototypes, standard version (references)
B : Cigarette prototypes incorporating tobacco treated with AC solution SFC-DL-13
C : Cigarette prototypes incorporating tobacco treated with AC solution SFC-DL-14

At this time, no results concerning the total qualities of the cut-filler nor the finished cigarettes are available.
A complete evaluation will be presented in the next report.

000144111

Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

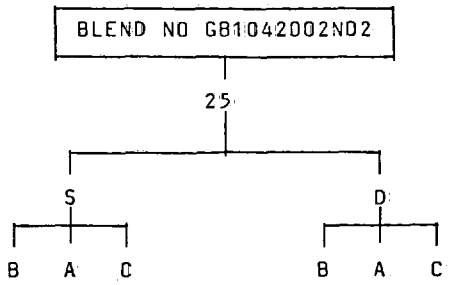
420 COMMONWEALTH 9 (CONTROL) NEW BLEND

Objective

To develop a Virginia cigarette of high quality, delivering 9.0 mg tar, which conforms to the Hunter list.

Description of samples and results

Tobacco blend No GB1042002N02 (new formula) was used to produce cigarette prototypes of different designs to which filters of 25 mm were attached in single and dual combinations.
For all prototypes, Mauduit 110-6 cigarette paper was used.
Unflavoured prototypes were produced, as references, along with two additional series (B + C versions), incorporating flavoured tobacco.
The schema below shows the overall set-up of the trials.



where : 25 : Filter length in mm
S : Single filter
D : Double filter
A : Cigarette prototypes, standard version (references)
B : Cigarette prototypes incorporating tobacco treated with AC solution SFC-DL-13
C : Cigarette prototypes incorporating tobacco treated with AC solution SFC-DL-14

At this time, no results concerning the total qualities of the cut-filler nor the finished cigarettes are available.
A complete evaluation will be presented in the next report.

0001144112

Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

Comments

We were requested by Richmond (US) to supply tobacco materials from each of the three trials blends which underwent the FTR process, i.e. :

COMMONWEALTH 4 (Control), blend No GB1040001N02 (FTR)

1) 100 kg of blended strips at ca. 13 % moisture delivery
2) 65 kg of CRS cut at 150 c.i. (0.17 mm) and ca. 13 % moisture delivery
3) 300 kg of treated and blended tobacco strips, standard formula for ET

COMMONWEALTH 9 (Control), blend No GB1042001N02 (FTR)

1) 100 kg of blended strips at ca. 13 % moisture delivery
2) 65 kg of CRS, cut at 150 c.i. (0.17 mm) and ca. 13 % moisture delivery

COMMONWEALTH 9 (Control), new blend No GB1042002N02 (FTR)

1) 100 kg of blended strips at ca. 13 % moisture delivery
2) 65 kg of CRS cut at 150 c.i. (0.17 mm) and ca. 13 % moisture delivery
3) 300 kg of treated and blended tobacco strips, standard formula for ET

We intentionally did not send any ET to Richmond; instead, only treated and blended tobacco strips, representing our standard blend used for the expansion process, were dispatched.
The idea was to make available to Richmond material on which they could try two different tobacco strand sizes, i.e. 40 c.i. (0.65 mm) and 45 c.i. (0.56 mm), before carrying out the expansion process.
By calculating the exact batch size for each of the trial-blends, it was possible (during the process), to set aside the above-mentioned tobacco materials without any loss or alteration of the original ratio of the tobacco grades within the final cut-filler.

ANF/cap/SEPTEMBER 29, 1981

000144113

Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

PROJECT TITLE : CIGARETTE DEVELOPMENT 3

PERIOD COVERED : JUNE 26 - SEPTEMBER 25, 1981

WRITTEN BY : Nagel-P. (PHN)

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422 BUBBLE ULTRA

Objective

To develop a MARLBORO line extension in the ultra low tar sector.

a) Tar : 4 mg/cig.
SN : 0.4 mg/cig.

b) Tar : 5 mg/cig.
SN : 0.5 mg/cig.

Format : 7.95 / 25 / 84.4 mm

Summary

The development is based on the WATSON prototype No 71 M (6 mg tar / 0.5 mg SN). The cigarette performed well in the product test organized in France. However, this product was never launched as it was no longer in the ultra low tar sector.
Using the smoke yield prediction program, the theoretical tobacco weight and the analytical figures of the reference cigarette were calculated. Several constructions were suggested in order to achieve the target figures.

Description of samples and results

1. The above-mentioned WATSON prototype No 71 M was repeated. The analytical figures were confirmed.

2. Furthermore, the same tobacco blend No PM0242201N02, which had undergone the same treatment as the WATSON brand (the Burley casing, Burley top flavour and Pre-Cut solutions are the same as those used for MLF, experimental EAC-81), was incorporated into the different cigarette constructions.
Of all the prototypes produced, Nos 3 P, 5 P and 12 P were selected (according to their taste qualities and analytical figures) for following up our development.

2000144114

Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

3. In order to bring the product more into MARLBORO family, the given blend No PM 0242201N02 underwent different treatments. For a description, see the table below. the previous processing version (A) is also given for comparison.

Blend No	---------PM0242201N02--------			
FTR batch No	865	897	898	899
Processing version	A	B	C	D
Type	MLF	MLF	MLF	MLF
Burley Casing	BUR-CAS STD-----*-------*-----			
Burley Top Flavour	BUR-TOP STD-----* ------*-----			
Pre-Cut	MF-PC	MF-PC	MF-PC	MF-PC
After-Cut	EAC-81	EAC-82	EAC-81	EAC-83

* : Only the US Burley tobaccos were treated.

The trials were run using the 3 constructions of prototypes Nos 3 P, 5 P, 12 P and the blend of processing versions B / C / D.

Another additional version (11 P) was made by utilizing 3.3 Y / 55'000 white tow and the blend of processing version D with the aim to increase the cigarette RTD without changing considerably the filter efficiency.

Taste evaluation is under way. A description of the prototypes selected will be reported in the next monthly report.

00001441115

Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

PROJECT NAME : BUBBLE ULTRA | PROJECT NO : 422 | PROJECT LEADER : PHN | DATE : 09.29.1981

PROTOTYPE NO		3 P	5 P	12 P
BLEND NO		PM0242201N02 (A)	PM0242201N02 (A)	PM0242201N02 (A)
TA	%	1.66	1.71	1.75
NITRATE-NITROGEN	%	0.22	0.21	0.22
REDUCING SUGARS	%	8.8	9.0	9.0
FORMAT : DIAMETER	mm	7.95	7.95	7.95
FILTER LENGTH	mm	25	25	25
CIGARETTE LENGTH	mm	84	84	84
TOTAL WEIGHT	mg/cig.	877	876	924
TOBACCO WEIGHT AT 12 % O.V.	mg/cig.	618	618	605
CIGARETTE RTD	mm WG	87	82	83
DILUTION	%	55	61	47
CIGARETTE PAPER		ECUSTA 753	ECUSTA 753	ECUSTA 753
TIPPING PAPER		6 x M. 0.15 . 4.5	4 x M. 0.3 . 3.5	4 x M. 0.15 . 4.5
FILTER : TYPE		SINGLE	SINGLE	DOUBLE
TOW		2.5 Y / 40'000	2.5 Y / 40'000	5.0 I / 46'000 - DICO TOP G 200
PAPER		FU-POV 100	FU-POV 100	FU-POV 100
RTD	mm	85	84	81
TAR	mg/cig.	4.8	4.1	5.4
SN	mg/cig.	0.42	0.38	0.46
CO	mg/cig.	6.8	5.3	8.7
NO	mg/cig.	0.10	0.09	0.12
PUFF COUNT		8.4	7.9	7.5

THE CIGARETTES ARE SMOKED ON A PM 20 PORTS.

0001444116

Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

360 FLORIDA MARKET TEST

Objective

To develop an American-blend cigarette differing in taste from MARLBORO RED.
Tar : 14 mg/cig.
SN : 1.1 mg/cig.
Format : 7.95 / 20 / 79.4 mm

Summary

The objectives described correspond to those of the project PETER PAN (except for the cigarette length which is 84 mm instead of 79.4 mm). Therefore, it was decided to base further FLORIDA development on the PETER PAN prototype No 17 P. The above-mentioned prototype was made by using the MLK CH construction in which the MARLBORO blend containing special flavour ingredients from Richmond USA was incorporated.

Description of samples and results

In view of the above, first of all the PETER PAN prototype was produced in long size format (7.95 / 20 / 79.4 mm). Later on, trials were carried out by using Pela S 130 M cigarette paper and Z4/80 electro-perforated tipping paper from Benkert. From all the prototypes produced, the expert Panel A selected candidate No 16 P. The description of this prototype and its comparison with the original PETER PAN prototype No 17 P is stated in the table on the next page.

Comments

A market test will be conducted during the period September-December 1981 in the Schaffhausen area. Brand name used is WESTERN.

0000144117

Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

PROJECT NAME		F L O R I D A	P E T E R P A N
PROJECT NO		360	350
PROTOTYPE NO		16 P	17 P
BLEND NO		046-360 ML 022 (A)	046-350 ML 022 (J)
TA	%	1.72	1.81
NITRATE-NITROGEN	%	0.21	0.25
REDUCING SUGARS	%	6.9	6.3
FORMAT : DIAMETER	mm	7.95	7.95
FILTER LENGTH	mm	20	20
CIGARETTE LENGTH	mm	79.4	84
TOTAL WEIGHT	mg/cig.	995	1058
TOBACCO WEIGHT AT 12 % O.V.	mg/cig.	762	817
CIGARETTE RTD	mm WG	95	92
DILUTION	%	17	16
CIGARETTE PAPER		PELA S 130 M	ECUSTA 753
TIPPING PAPER		KORK Z3/60	KORK Z3/60
FILTER : TYPE		SINGLE (MLKPB)	SINGLE (MLKPB)
TOW		3.4 I / 46'000	3.4 I / 46'000
PAPER		FU-POV 24 L	FU-POV 24 L
RTD	mm WG	65	66
TAR	mg/cig.	14.5	15.3
SN	mg/cig.	1.12	1.20
CO	mg/cig.	14.9	15.5
NO	mg/cig.	0.22	0.24
PUFF COUNT		8.6	9.3

THE CIGARETTES ARE SMOKED ON A PM 20 PORTS.

0000144118

Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

406 SALONICA

Objective

To develop a MURATTI AMBASSADOR KING SIZE (MAK) for Greece.
Diluted cigarette : Tar = 12 mg/cig.
Undiluted cigarette : Tar = 14 mg/cig.

Summary

Greece's entry into the EEC in 1981 is expected to result in greatly increased activity by PM's International competitors in all sectors of the cigarette market. Awareness of the Smoking and Health issue is expected to increase, leading to a trend towards milder products.
Following these assumptions, it was suggested to launch the MAK (thought to be produced at PAPASTRATOS) which will establish a foothold in the light sector of the market.

The development was carried out following two guide-lines towards : a) diluted final product
b) undiluted final product

For obvious reasons, only the non-tobacco materials available in the EEC market could be used.

Description of samples and results

Tobacco blend

Using blend No GR0340601N10 for the diluted version and No GR0340602N10 for the undiluted version, all the trials were run at PAPASTRATOS Greece.
Each tobacco blend contained 55 % of the "basic blend" and the remaining of 45 % was composed of tobaccos available in Greece. The two basic blends (strips) were prepared at FTR Neuchâtel. After having passed through the pre-conditioning chamber ("MALLET"), the strips at 17 % MC were collected, dried down to 13 % MC and sent to PAPASTRATOS. There, they were put together with the rest of the blend and processed following the MAA 44 specifications for blend No GR0340602N10 and the MAA 42 specifications for blend No GR0340601N10.

0001441119

Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

Cigarette prototypes

a) Diluted version

The construction of the prototypes produced, in which blend No GR0340601N10 was incorporated, followed the MAK 08 cigarette-making specifications dated before July 1st 1981 (48 mm tipping paper width). Apart from the standard PELA 54 cigarette paper, another one, the PELA S 130 M, was tested on this cigarette.
As it is known that a tipping glue can influence the taste of diluted cigarettes, the comparative test had to be performed using the Türmerleim KFZ A2 local glue and the Lesso 1516 G glue from FTR.

b) Undiluted version

Based on the MAK 05 cigarette-making specifications, the prototypes were produced with blend No GR0340602N10. The filter specification was altered by replacing the 3.1 R / 82'000 white tow with the 2.5 Y / 55'000 white tow (economic reasons). Another two PELA 170 MNC and PELA 200 MN cigarettes were also tested.

From all the prototypes produced, the expert Panel A selected the diluted version No 3 P which will be presented to the Marketing Department of Area V. For a description of the prototype chosen, see the table on the next page.

P. Vagel

PHN/cap/SEPTEMBER 29, 1981

0001441120

Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

PROJECT NAME		S A L O N I C A
PROJECT NO		406
PROTOTYPE NO		3 P
BLEND NO		GR0340601N10 (A)
TA	%	1.44
NITRATE-NITROGEN	%	0.23
REDUCING SUGARS	%	10.6
FORMAT : DIAMETER	mm	7.95
FILTER LENGTH	mm	20
CIGARETTE LENGTH	mm	84
TOTAL WEIGHT	mg/cig.	1169
TOBACCO WEIGHT AT 12 % O.V.	mg/cig.	875
CIGARETTE RTD	mm WG	111
DILUTION	%	24
CIGARETTE PAPER		PELA 54
TIPPING PAPER		4 x M. 0.15 . 4.5
GLUE		1516 G
FILTER : TYPE		DOUBLE
TOW		2.5 Y / 55 - 5.0 X / 40
ADDITIVE		ACTIVE CHARCOAL
PAPER		FU-POV 40 L
RTD	mm WG	72
TAR	mg/cig.	12.0
SN	mg/cig.	0.94
CO	mg/cig.	14.1
NO	mg/cig.	0.24
PUFF COUNT		9.5

THE CIGARETTES ARE SMOKED ON A PM 20 PORTS.

0001441121

Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

PROJECT TITLE : CIGARETTE DEVELOPMENT 4

PERIOD COVERED : AUGUST 26 - SEPTEMBER 24, 1981

WRITTEN BY : Toïmil-R. (RAT)

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413 PALINKA

Objective

To reproduce the MPK brand in Hungary.

Summary

Following the first trials carried out at FTR, prototype No 1 P was reproduced in Hungary.

Description of samples and results

Prototype No		1 P (FTR)	1 C 1 (Hungary)
Blend		A	A
Filter version		I	I
Tar	mg/cig.	14.8	16.6
SN	mg/cig.	1.0	1.16
Puff count		9.3	11.2
Filter RTD	mm WG	76	74
Cigarette RTD	mm WG	118	122
TA	%	1.16	1.20
RS	%	12.8	12.4
$N\text{-}NO_3$	%	0.10	0.08
$N\text{-}NH_3$	%	0.12	0.11
Tobacco weight at 12 %	mg/cig.	862	948

Comments

A significant difference is observed between the tar figure of prototype 1 P and that of prototype 1 C 1 produced in Hungary. This difference may issue from the difference in the tobacco weight between these two prototypes (86 mg).

0001441122

Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

368 COSMOS

Objective

To help the Russians to develop an American-type cigarette for their market.

Summary

On the basis of prototypes Nos 9 C 1, 13 C 1 and 23 P, different prototypes were produced at FTR and presented in Moscow. Versions 39 P, 39 PR and 39 CT have been selected as possible candidates for future production.
(See a description of the prototypes presented in Moscow on the next page).

RAT/cap/SEPTEMBER 25, 1981

0001441123

Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

PROTOTY-PE NO	NO AT SMOKING SESSION	BLEND NO	PC	AC	BC	TF	FILTER	CIGARET-TE PAPER	TIPPING PAPER	GLUES	
										CIGARETTE SEAM	TIPPING SEAM
39 P *	9 C 1	903	EPC-4	EAC-74	EBC-8	ETF-1	MLF-PB	TERCIG	KORKOPHAN	MAIS-FTR	1516 G
52 P	23 P	904	EPC-4	EAC-74	EBC-8	ETF-1	MLF-PB	MAUDUIT	KORKOPHAN	MAIS-FTR	1516 G
43 P	13 C 1	905	EPC-4	ROK-AC	-----	-----	MLF-PB	TERCIG	KORKOPHAN	MAIS-FTR	1516 G
39 PR *	30 P	903	EPC-4	EAC-74	EBC-8	ETF-1	MLF-PB	RUSSIAN	KORKOPHAN	MAIS-FTR	1516 G
53 PR		904	EPC-4	EAC-74	EBC-8	ETF-1	MLF-PB	RUSSIAN	KORKOPHAN	MAIS-FTR	1516 G
43 PR	29	905	EPC-4	ROK-AC	-----	-----	MLF-PB	RUSSIAN	KORKOPHAN	MAIS-FTR	1516 G
39 FR	28 P	903	EPC-4	EAC-74	EBC-8	ETF-1	RUSSIAN	MAUDUIT	KORKOPHAN	MAIS-FTR	1516 G
53 FR		904	EPC-4	EAC-74	EBC-8	ETF-1	RUSSIAN	TERCIG	KORKOPHAN	MAIS-FTR	1516 G
43 FR	27 P	905	EPC-4	ROK-AC	-----	-----	RUSSIAN	MAUDUIT	KORKOPHAN	MAIS-FTR	1516 G
39 R		903	EPC-4	EAC-74	EBC-8	ETF-1	RUSSIAN	RUSSIAN	RUSSIAN	MAIS-FTR	RUSSIAN
53 R		904	EPC-4	EAC-74	EBC-8	ETF-1	RUSSIAN	RUSSIAN	RUSSIAN	MAIS-FTR	RUSSIAN
43 R		905	EPC-4	ROK-AC	-----	-----	RUSSIAN	RUSSIAN	RUSSIAN	MAIS-FTR	RUSSIAN
39 CT *		903	EPC-4	EAC-74	EBC-8	ETF-1	MLF-PB	RUSSIAN	RUSSIAN	MAIS-FTR	RUSSIAN
53 CT		904	EPC-4	EAC-74	EBC-8	ETF-1	MLF-PB	RUSSIAN	RUSSIAN	MAIS-FTR	RUSSIAN
26 P	26 P	903	EPC-4	EAC-74	EBC-8	ETF-1	MLF-PB	MAUDUIT	KORKOPHAN	MAIS-FTR	1516 G
24 P	24 P	904 R2	EPC-4	DIK-AC	EBC-8	ETF-1	MLF-PB	MAUDUIT	KORKOPHAN	MAIS-FTR	1516 G
22 P	22 P	904 R1	EPC-4	ROK-AC	EBC-8	ETF-1	MLF-PB	MAUDUIT	KORKOPHAN	MAIS-FTR	1516 G
25 P	25 P	905	EPC-4	ROK-AC	-----	-----	MLF-PB	MAUDUIT	KORKOPHAN	MAIS-FTR	1516 G
31 P	31 P	905	EPC-4	ROK-AC	-----	-----	MLF-PB	MAUDUIT	KORKOPHAN	MAIS-FTR	RUSSIAN
32 P	32 P	903	EPC-4	EAC-74	EBC-8	ETF-1	MLF-PB	MAUDUIT	KORKOPHAN	MAIS-FTR	RUSSIAN

* : Prototypes selected in Moscow as possible candidates for future production

RAT/cap/09.25.1981

Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

PROJECT TITLE : CIGARETTE DEVELOPMENT 5

PERIOD COVERED : AUGUST 21 - SEPTEMBER 22 1981

WRITTEN BY : Du Bois-J.-H. (JHD)

E U C

Objective

- To establish a detailed study of our 1980 activities concerning "Marketing / Operations" and R & D projects.
- To study a system of planification which would enable each person concerned to know which things have to be done and when.

Results

The network and activity lists have been presented to the project leaders in order to be modified and to include their specific needs. These lists have not yet been returned to us.
The meeting with Hewlett-Packard was slightly disappointing in that their systems are limited as far as capacity is concerned (this could however be modified) and that they have no solution for treating the projects in parallel.

Follow-up

These problems will now be studied with IBM and in the context of Cigarette Data Bank.

00014125

Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

383 HELIUM

Objective

To produce a 100-mm cigarette with a total weight of less than 850 mg/cig.

Results

Nothing concrete can be reported this month.

Follow-up

Burley ETNA will now be used which should give a cigarette with a total weight of 817 mg for 60 % of ETNA and a compressibility of 3.75.
With a 20-mm filter, the weight gain would be about 5 mg.
The use of an empty cavity filter with two 5.0 / 45'000 acetate plugs would enable a weight saving of 18 mg.
A diameter reduction of 0.6 mm would enable a weight saving of 14.7 %.
An expanded MLF blend will also be produced.

386 COCONUT

Objective

DPM : 14 mg/cig.
CO : lower than 10 mg/cig.
The other characteristics remaining, if possible, the same as those of MLF.

Results

MLF cigarettes with 8 / 64'000 Y and 8 / 80'000 R simple acetate filters gave the following results :

DPM	13.4	14.2	13.8	15.4
CO	9.7	12.2	11.2	11.3

A confirmation analysis gave the following results :

DPM	13.8	15.3	13.7	15.9
CO	8.1	9.6	9.5	11.0

These results are encouraging and two bales of acetate have been ordered from the USA.

0000144126

Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

Follow-up

Two types of COSTAR filters have been received from Filtrona and will be tested this month.

J. DuBois

JHD/cap/SEPTEMBER 23, 1981

0001441127

Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

PROJECT TITLE : MATERIAL DEVELOPMENT

PERIOD COVERED : AUGUST 27 - SEPTEMBER 28 1981

WRITTEN BY : Erkohen-E. (ELE)

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1. NEW FILTRATION MATERIAL

Eastman Tow 8.0/64.000 Y and 8.0/80.000 R

Objective

Search for a new filtration material in order to attain the objective of project COCONUT (386).

Summary

Based on the results given by the cigarette construction model for project COCONUT, Eastman was asked to supply us with a 8.0 denier per filament tow with a high total denier. The qualities mentioned above were received. The filter rod RTD for the 8.0/64.000 Y tow was 320 mm WG, while for the 8.0/80.000 R it was 335 mm WG for a 108 mm filter rod. (1)

Description of Samples and Results

MLF-CH cigarettes were made with these filter rods. The cigarettes were smoked twice for the determination of TPM, DPM, SN values and thrice for CO and NO. The mean values obtained for these determinations are given in the table on the following page.

Conclusion

The optimum was reached with these prototypes for the given objectives. We noticed that we are still low in the total RTD of the cigarette. Prototypes No. 2 and 4 are within the objectives of tar and nicotine but they are 1 to 1.5 mg/cig too high in CO delivery. Further dilution of the prototypes allows us to attain the CO objective but then the tar and nicotine deliveries are out of limits (prototypes 1 and 3). The excess of CO on prototypes No. 2 and 4 could be reduced if E-30179 cigarette paper was used on these prototypes. (2)

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

Prototype N	1	2	3	4
Tow Item	8.0/64.000 Y	8.0/64.000 Y	8.0/80.000 R	8.0/80.000 R
Dimensions mm	7.92/18/79	7.92/18/79	7.91/18/79	7.91/18/79
Tobacco Weight at 12% MC mg	785	791	782	783
RTD cig mm WG	66	68	73	74
RTD Filter mm WG	52	52	56	56
Dilution % US	49	43	46	40
Filter Efficiency %	30	30	34	34
CO mg/cig	8.7	11.1	10.0	11.5
NO mg/cig	0.14	0.16	0.15	0.17
TPM mg/cig	15.2	16.7	15.3	17.2
DPM mg/cig	13.6	14.8	13.8	15.7
SN mg/cig	1.07	1.12	1.03	1.12
Tar mg/cig	12.5	13.7	12.8	14.6
Puff Count	10.2	10.0	10.0	9.9

4000144129

Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

Follow-up

On the basis of the results given by prototype 4, Eastman was requested to submit a 5.0/60.000 Y tow. In our opinion, this tow will give a higher RTD while maintaining the filter efficiency at the same level as the 8.0/80.000 R tow. Further development work will continue with this tow.

2. TIPPING PAPER

2.1. Malaucène Micro-Laser Perforated Tipping Paper

Objective

Possible replacement of existing tipping paper on MLF-CH and MLK-CH brands with laser type perforated tipping paper.

Summary

MLF-CH and MLK-CH cigarettes are produced with Benkert Z3/60 electro-perforated tipping paper (air permeability: 60 l/h 4 cm^{-1}). Due to the deterioration of Benkert's quality, the perforation of the tipping has become visible. Trials have been carried out with laser perforated tipping paper. Although the smoke delivery objectives were attained the taste evaluation was contradictory. Lately new MLK-CH samples were prepared and analysed.

Description of Samples and Results

The smoke yield and some of the important physical characteristics of the MLK-CH cigarettes are given in the table on the following page.

Comments

The four different types of tipping paper used on the prototypes did not show any significant difference compared with the standard from the delivery point of view.

Follow-up

The cigarettes will be evaluated by different panels and a final decision will be based on the taste results.

0001441130

Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

Type of Tipping Paper	3M 0.11.6.5	3M 0.15.4.5	2M 0.22.7.5	4M 0.075.5.5	Z3/60
Dilution % US	18 ± 4	20 ± 3	20 ± 3	18 ± 2	17 ± 2
Dimensions mm	7.95/20/84	7.97/20/84	7.95/20/84	7.96/20/84	7.95/20/84
Filter Efficiency %	42	42	42	42	42
Tobacco Weight at 12% MC mg	807	812	807	808	815
Filter RTD mm WG	65	65	64	64	66
Total RTD mm WG	100	98	100	99	103
CO mg/cig	15.2	15.7	15.3	15.9	15.9
NO mg/cig	0.21	0.22	0.22	0.22	0.23
TPM mg/cig	19.9	19.4	19.6	20.5	19.8
DPM mg/cig	17.8	17.2	17.3	18.1	17.7
SN mg/cig	1.15	1.12	1.15	1.18	1.14
Puff count	9.7	9.8	9.7	9.8	9.3
HCN µg/cig	213	206	205	219	231
Total Aldehydes mg/cig	1.35	1.30	1.28	1.33	1.33
TA %	1.69	1.67	1.67	1.85	1.77
RS %	7.9	7.9	7.0	8.2	7.7
Nitrate-N %	0.19	0.19	0.19	0.20	0.20
Ammonia-N %	0.29	0.29	0.30	0.31	0.31

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

2.2. Ecusta Micro-mechanically Perforated Tipping Paper

Objective

Possible replacement of the existing paper on MLF-CH and MLK-CH with micro-mechanically perforated tipping paper.

Summary

Ecusta submitted micro-mechanically perforated tipping paper. The first two trials on MLK-CH to substitute the existing Z3/60 were negative: tastewise the samples were not acceptable in one case, in the other case the dilution was too low. Recently Ecusta submitted a new sample, with a permeability of air of 60 l/h 4 cm^{-1}.

Description of Samples and Results

MLK-CH type cigarettes were made with this tipping paper and compared with MLK-CH standard cigarettes. The dilution level attained was too high in comparison with the standard. A summary of the analytical results obtained on the prototype is given in the table below.

	Ecusta TOD-09791 Trial	Z3/60 Control
Dilution % US	31 ± 4	17 ± 2
CO mg/cig	12.9	15.9
NO mg/cig	0.20	0.23
TPM mg/cig	17.1	19.8
DPM mg/cig	15.3	17.7
SN mg/cig	1.03	1.14
Puff count	9.8	9.3
HCN µg/cig	156	231
Total Aldehydes "mg/cig"	1.12	1.33

Comments

The dilution level reached on the prototypes with this tipping paper was too high compared with the standard. Earlier trials with other tipping papers with the same permeability (all other cigarette factors remaining constant) gave different dilution results (3,4). As all trials gave different dilution levels (13-31%), Ecusta will be contacted on this problem.

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

3. ASSISTANCE TO PROJECTS

3.1. VIEJO

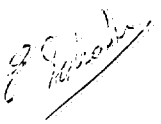
Based on the results given by the cigarette construction model, a 2.5/51.000 Y tow was proposed as filtration material with 60% dilution, in order to attain the objectives of this project.

3.2 KURT

A 2.5/48.000 Y tow was proposed with 39% dilution, in order to attain the objectives of this project.

References

1. Erkohen-E. Monthly Report (August 1981)
2. Letter from Erkohen-E. to Wattenspapier, March 20th, 1981
3. Erkohen-E. Monthly Report (July 1980)
4. Erkohen-E. Monthly Report (February 1981).



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Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

PROJECT TITLE : TOBACCO STUDIES

PERIOD COVERED : AUGUST 28 - SEPTEMBER 28 1981

WRITTEN BY : Joseph-L. (LIJ)

TOBACCO LOT ANALYSES

Introduction of Inputs on EDP

Partial analytical results of sixteen lots were introduced in the PME Analytical Data List this month.

Lots under Evaluation

Forty-two lots.

Lots Available, but not yet Analyzed

One hundred and fifty-seven lots.

Miscellaneous

The US MD tobacco from the 1980 crop was analyzed and compared with 1978 and 1979 crops. The TA levels of the 1980 crop are higher than the TA values of the 1978 and 1979 crops ($\sim$ 70% and $\sim$125% respectively). The NO_3-N levels are also higher ($\sim$ 70% and $\sim$140% respectively). These differences also appear in the SN and NO smoke deliveries. Except for the aldehydes, which are lower, all other smoke values are more or less comparable.

ASSISTANCE TO OTHER PROJECTS

LIBRARY Project

The analyses of all the samples of the second series of trials are under way (64 samples).

REFERENCE CIGARETTES

A reference cigarette was made this month with a COMMONWEALTH 9 blend.

LIJ/nod/OCTOBER 1 1981

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

PROJECT TITLE : CIGARETTE AND SMOKE ANALYSIS

PERIOD COVERED : AUGUST 25 - SEPTEMBER 22 1981

WRITTEN BY : Senehi-F (SEF)

TAR AND NICOTINE CONTENTS OF CIGARETTE SMOKE

The official methods used to determine the smoke deliveries can vary in certain countries. In order to be able to convert the results found with the other methods to ISO/CORESTA figures, we carried out a comparative study.

The same king size cigarette was smoked following different methods and the results are presented in the table below :

METHOD:	PME ISO-CORESTA	UK DHSS	USA FTC	GERMANY DIN
Tar	a	a x 1.022	a x 0.94	a x 0.90
Nicotine	b	b	b x 0.90	b x 0.90
example:				
Tar (mg/cig)	15.0	15.3	14.1	13.5
SN (mg/cig)	1.20	1.20	1.08	1.08

These differences in smoke yield are mainly due to

1. Butt length calculation
2. Smoking machine (smoking trap)
3. Ventilation around the cigarette
4. Method of calculation of the smoke nicotine

Please note that these correction factors are only approximate. A study is under way to replace for Germany the correction factors for tar and nicotine by a regression curve of the type $y = ax + b$.

EXPANDED TOBACCO USED FOR THE FIRST TIME BY LAURENS IN THE NETHERLANDS

The manufacturer Laurens in the Netherlands uses 2 % expanded tobacco in the brand Caballero 70/NF recently launched on the Swiss market. The analyses show that this material was produced using the Reynolds process.

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

PRODUCT REPORTS

Product reports were written on the following new or modified brands:

Brand	Manufacturer	Country of Sale
Caballero 70/NF (new brand)	Brinkmann	West Germany
Caballero 84/F (new brand)	Brinkmann	West Germany
Peer Export 84/F (new pack design)	Laurens-Rothmans	Switzerland
Select No. 3 80/F (line extension)	Burrus	Switzerland
Fine Super Length 120/F (new brand)	SEITA	United Kingdom

REFERENCES

1 Letter from Senehi-F to Borek-A (September 17 1981)

2 Letter from Senehi-F (September 23 1981)

SEF/edk/SEPTEMBER 28 1981

0001441136

Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

PROJECT TITLE : QA ANALYTICAL SERVICES

PERIOD COVERED : AUGUST 27 - SEPTEMBER 17 1981

WRITTEN BY : Widmer-A (ALW)

3.4.1. TRIALS WITH NEW SUPPLIES OF FILTER COMPONENTS

- Activated charcoal (H. FORRER AG, Zollikon (CH); NESS (GB)) (1)

  Two samples based on mineral charcoal were submitted:

  - "CC 1230 M", Yellow sheet 6102
    The sample is within the specifications as regards the CCl_4-index (65.9 %), but slightly out of the specifications as regards granulometry.

  - "CC 1236", Yellow sheet 6107

    The sample is at the limit as regards CCl_4-index (60.3 %) and slightly out of the specifications as regards granulometry.

  Because the quality "CC 1230 M" is closer to the specifications, 100 kg of it were ordered for an industrial trial (24/08/81).

- Activated charcoal (P. HAUSER AG, Zürich; NORIT N.V., Amersfoort (NL)) (2)

  Two types of activated charcoal, based on peat, were taken from normal production and submitted for analysis. The sample "0.3 - 1 mm" was largely out of the specifications as regards granulometry and the CCl_4-index. The sample "0.8 mm" was closer to the specifications, but was still not acceptable.

  A discussion with representatives of NORIT was organized (3). The latter will check the possibility of manufacturing activated charcoal which corresponds to our specifications, on a routine basis. As a basic material, coconut shells or peat will be taken into consideration.

5.4. SERVICES FOR OTHER GROUPS

- Services for Product Development
  Triacetin in filters (6 samples)

- Services for the Research Department
  Sodium by AA in tobacco extracts (17 samples)

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

REFERENCES

1 Monthly report Widmer-A (May 1981)

2 Letter from Gmünder-R to Lopes-F (July 15 1981)
Letter from Widmer-A to Gmünder-R (August 31 1981)

3 Report of visit from Gmünder-R (September 9 1981)

F. Lopes

ALW/edk/OCTOBER 5 1981

0001144138

Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

PROJECT TITLE : SPECIFICATIONS

PERIOD COVERED : August 29 - September 24 1981

WRITTEN BY : Flury-C. (CAF)

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1. Specifications - General (1,2)

A discussion took place between the four project leaders of Product Development and the representatives of the PME Specifications Office on September 10, 1981. The objectives were :

a) To familiarize the project leaders with the EDP programme allowing the calculation of the cigarette-making specifications.

b) To define the terms and actions for the project leaders who will use this programme for their prototype cigarettes and also to allow them to consult the PME specification library on EDP.

c) To clarify the specification "tobacco weight" which is to be stated on future project specifications, prepared by the Specification Office in co-operation with the project leader.

2. FTR Switzerland (3)

- Specifications for the contract manufacture of two brands have been established :
  - MHC Marlboro 100s box, on behalf of PM UK
  - MAC Ambassador Extra Mild, on behalf of PMH
- FTR production and QC representatives have defined new AccuRay settings for cigarette manufacture. Part of the cigarette-making specifications have already been changed accordingly.

3. PMH Holland

- EDP inputs/outputs have been produced for PMH's cigarette-making specifications, taking into account :
  - The change of the substance of several tipping papers;
  - The addition of improved stems (IS) produced by PMG, to five Dutch blends.

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- Project specifications (processing, one recipe and cigarette making) have been produced for TENNIS, ref. 208.

4. PMG Germany

- The Berlin processing specifications have been adapted to comply with the requirements of their new primary.

- Munich's Marlboro Filter MLF 10 cigarette-making specification has been modified in view of the 3-month test with standardized specific weight (12%) and AccuRay limits.

- The inner frame board "Cosmocart 230 g/m^2" (previously Bayern 230 g/m^2) will be used on MLB Marlboro King Size 20s, for sale in Germany, in the future. Cosmocart 230 g/m^2 will thus replace Invercote D 240 g/m^2 on this brand. Restrictions regarding approval of this alternative cardboard may be found in the "Usage of Materials" file!

- EDP input/output forms have been prepared for PMG's cigarette-making specifications. At this time, the modification of several tipping paper substances and other questions were brought up.

- Complete specifications were received for project MASKI, ref. 049, brand AIA Arizona, for sale in Germany. The cigarette corresponds to MLY 02 Marlboro Lights, except for the tipping paper. First production : mid-September.

5. WELTAB Belgium

EDP input/outputs have been produced for QC Weltab. The main modifications are :

- Modified substances in tipping papers;
- Adaptation of MAC 01 Ambassador Extra France to the weight standard of Ambassador Extra Italy.

6. Licensees

- Hungary :
A complete set of provisional specifications has been prepared for the manufacture of MPM Multifilter King Size Soft, in Eger. Solutions ex FTR and a filter ex Intertaba will be used.

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- Finland:

  - New packing version for MFF 300 Marlboro Filter soft, for sale in USSR.
  - Modified packing specifications, foreseeing the use of Kaubelprint bundle paper instead of the former Walkiart TP paper quality.
  - Processing and cigarette making specs (LMB 09) were established for the manufacture of L & M Filter, 79,4 mm, cigarettes by ATO Hyryläe. This brand was previously manufactured by SUOMEN. L & M are packed as
    - LMB 334 box, for sale in Norway, and
    - LMC 303 soft, for sale in Finland.

- Italy:

  - Four specification files,
    - DIK Diana King Size
    - DIS Diana Specially Mild
    - MAA Ambassador Filter
    - MAK Ambassador King Size

    have been completely reviewed. Main modification has been the change to the PME standard moistures (packed cigarettes) and cigarette diameters (7,950 mm).

  - MEK Mercedes King Size cigarettes, according to specifications project ALFA step 1, have been manufactured in Florence on 14-15-16th September.

- Germany:
  The specification file drafted by the L & M licensee Martin Brinkmann AG, Berlin/Bremen, was checked and returned to Area Operation Department, for re-discussion with the licensee.

- USSR:
  Project specifications COSMOS (5 blends, 2 filters, 18 cigarettes) have been made available to Area Operation Department.

7. PME Standard Recipes (4 and 5)

Several new and modified recipes have been distributed, as per accompaning letters.

8. PME Material Specifications and Drawings

- The section IF inner foil of the "Usage of material"

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

file has been updated.

- Operations PME, in co-operation with the Specification Office, have prepared a complete set of drawings showing the cigarette prints (logotypes) and their positioning. These drawings have been made available to the QC managers of each production center, for their own use, their production and their purchasing departments.

- New submissions of PME material specs to suppliers:

  - Hinge lid, to Europe Carton AG, Carl Werner, and Interdruck, all in Germany.
  - Cigarette papers Tercig H 10 DIN 60 and Tercig O 8,5 ND 4321, to Tervakoski OY, Finland.
  - Filter BSE-80, DWS 635824, to Filtrona International Ltd, London.

REFERENCES : 1. Programme EDP pour le calcul des dimensions et poids des cigarettes - memo SOPA to project leaders (September 1981)
2. Programme specs cigarettes - note to file (September 1981)
3. Modifications de spécifications - memo Grossen-E. to distribution (August 1981)
4. PME standard recipe book - memo Flury-C. to distribution (September 1981)
5. As reference 4.

CAF/caf/September 24 1981

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

PROJECT TITLE : PROCESS ASSURANCE

PERIOD COVERED : September 1 - September 30 1981

WRITTEN BY : Bel-T. (THB)

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1. Quality Workshop (1)

The monthly report supplement, covering the month of July, has been sent to PME management and to the QC managers.

2. Quality Control Audit

The questionnaire for the second Quality Control Audit has been terminated, and the first interviews have been conducted, in Neuchâtel, Brussels, London-Silvertown, and Zola Predosa.

REFERENCES : 1. Quality workshop, monthly report supplement (September 1981)

T. Bel

THB/caf/September 30 1981

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

PROJECT TITLE	:	INSTRUMENTATION AND PROCESS AUTOMATION
PERIOD COVERED	:	23 AUGUST - 22 SEPTEMBER 1981
WRITTEN BY	:	Thévoz-M. (MIT)

Automation of the Smoking Laboratory

The setting-up of the data link between the different laboratories has been completed. About 50 junction boxes are available to the user for the link-up between the various terminals. A direct line connected to the HP 1000 computer will provide the Manager of the Smoking Laboratory with the following possibilities :

- To obtain improved graphic reports on the screen;
- To have remote control of the report printing;
- To have direct access to the data-base;
- To watch over the running of the computer and to collect error and alarm messages;
- To send collective messages to the different work places;
- To copy and store certain results on magnetic tape;
- To obtain detailed reports concerning the analyses in progress.

The connection of some Mettler AK 160 scales to the various electronic interfaces has just been developed and tested on a calculator which may be programmed with a microprocessor (SMAKY 6-Z80). A test programme has been written in assembler language to enable automatic reading on the scale with a fully-automatic stability control. This programme will be used as a basis on which the demonstration post "TPM Determination" will be checked. The latter will be put into use in the Smoking Laboratory by the end of this year.

RTD/DIL Data Processing

The evaluation of the programmes written in BASIC will not be started until October 1981. This delay is due to considerable lateness in the delivery of the HP 85 calculator. The interface used for direct reading of the RTD/DIL measuring instrument (SODIM model) is currently being constructed. It is planned to set it up on the HP 85 calculator at the beginning of November 198

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Construction of Measuring Instruments

A series of 10 compressibility instruments (FTR model) is currently being made for a large order from the QA laboratories in Richmond.

MIT/jud/SEPTEMBER 17 1981

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

PROJECT TITLE : PATENTS

PERIOD COVERED : August 17 - September 16, 1981

WRITTEN BY : Mandiratta-J-C (MJA)

PROJECT EXIT

Prior art search was carried out in the West German Patent Office in Munich. This information, in addition to that already submitted to the West German Patent Office, was included in our opposition letters, dated September 1, 1981, to the Dutch and Swedish Patent Offices.

RENEWAL FEES

The renewal fees have been paid for the following patents :

Switzerland Great Britain	529520 1315086	Method for processing parts of tobacco substitute plants into a tobacco substitute leaf.
West Germany Great Britain	PS2358611 1402510	Process for shaping a pulp, mash or slurry into smokable fibers.
West Germany Great Britain	PS2358656 1444816	Extruder nozzle for shaping a pulp to form smokable strands of fibers.
West Germany Great Britain Switzerland	PS2358657 1401099 591819	Smokable material and the process of making same.
West Germany Switzerland	PS2551900 598866	Continuous process for the production of a paste with additives which can be formed into a smokable material and a stirrer crushing mill for the execution of this process.

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West Germany	OS2941680	Process of reducing nitrates and nitrites in tobacco (Candida).
Luxemburg	82926	Improvements on a Gas-Chromatograph.

MJA/mle/September 17, 1981

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhk0000